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Object: Work of Science: Cookie's Bustle Gameplay Concept	العمل العلمي: مفهوم لعبة صاخبة كوكي
Web-address: https://interoco.com/all-materials/work-of-science/3823-concept.html	

International Online Copyright Office

INTEROCO

(European Union, Germany, Berlin)

WORK OF SCIENCE

Cookie's Bustle Gameplay Concept

INTEROCO Copyright Office – 2022

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STRUCTURE OF DOCUMENT

I. ANNOTATION
II. BASIC DEFINITIONS
III. ANALYSIS OF CLOSEST ANALOGS
IV. RELEVANCE AND SUMMARY OF WORK
V. LEGAL BASIS
VI. SOURCES OF REFERENCES
VII. INFORMATION ABOUT THE EXPERT

Works of science as intellectual property (copyright) objects are stipulated in

1	**Berne Convention for the Protection of Literary and Artistic Works** (1971) Article 2. Protected Works: (1) (1) The expression "literary and artistic **works**" shall include every production in the literary, **scientific** and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature; dramatic or dramatic-musical works; choreographic works and entertainments in dumb show; musical compositions with or without words; cinematographic works to which are assimilated works expressed by a process analogous to cinematography; works of drawing, painting, architecture, sculpture, engraving and lithography; photographic works to which are assimilated works expressed by a process analogous to photography; works of applied art; illustrations, maps, plans, sketches and three-dimensional **works** relative to geography, topography, architecture or **science**.

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2	United Arab Emirates Federal Law No. 7 of the Year 2002 Concerning Copyrights and Neighboring Rights Article 1. In applying the provisions of this law, the following words denote the definitions explained before each one of them, unless the context denotes otherwise: "The **Work**" - any created compilation, in the scope of letters, arts, **sciences**, whatsoever is its type, mode of expression, value or purpose.

According to above mentioned laws in the UAE work of science, as an object of copyright, should:

- Be the result of creative activity;
- Exist in any objective form.

Considered a work of science – **Cookie's Bustle Gameplay Concept** meets to the definition of an object of copyright according to chapter 1, "Scope of legal protection" (section 1 Scope of Protection) of the Federal Law of the United Arab Emirates number 7, 2002 "On Copyright and Neighboring Rights" of July 17, 2002.

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The result of creative activity, innovation, relevance, scope of work of science **Cookie's Bustle Gameplay Concept** is listed in this publication, and confirmed by a certificate of deposit of copyright works.

The study of objective form of current work of science through materials research and examination of the object on the criteria for copyright eligibility held:

Intellectual Property Expert, authorized representative of INTEROCO Copyright Office *(signature, stamp)*	**Dr. Muminov Sandjar**

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I. ANNOTATION

Work of Science "Cookie's Bustle Gameplay Concept" is a computer program of an adventure game. This software serves as a source of entertainment for the users. The first edition was released as a package CD software in December 1999 solely in Japan. The software was only in the market for a year and totaled the sales of about 10,000 copies. Despite its short-lived presence in the market, there are still many fans, in both Japan and internationally, that regard Cookie's Bustle as a legendary game. Its appraisals are owed to the game's exceptional balance between the wholesome designs and the hard-hitting portrayal of the world and society.

The main character is Cookie Blair, a five-year-old girl. She was born in a very ordinary house in New Jersey, and raised in a very ordinary fashion. However, the only difference is that she believes she is a baby bear. The uniqueness of this game is further highlighted by the protagonist's portrayal as a baby bear, which in essence is her alter ego. It is believed that she fabricated this persona for herself, as her father would call her 'baby bear' as a nickname. Her unwavering belief enables her to be invincible, it is never mentioned in the game but this allows her to possess a sort of "super strength", alongside her exceptionally high IQ. Cookie's character had always been renowned for the contrast between her charming immaturity and amusing sass. The user will only ever see her as

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she sees herself, an adorable yellowish-brown bear wearing a short-sleeved blue dress that struts a cute daisy design. Another impressionable point is that with her left hand, she is always holding 'Grey Rabbit' by its right ear. Grey Rabbit is a doll that is a gray rabbit. It symbolizes her endearing childishness but it also implies that she is never alone.

The game is set in a fictional country called 'Bombo World', a tiny country floating in the South Pacific. The game begins with Cookie arriving at the Bombo Airport for two main goals: to visit her Grandma Nancy, and to win a Gold Medal in the 'Bombo Sports Tournament'. In order to participate in the Tournament, Cookie must get an Entry Card that was supposed to be given to her by her Grandma. Once Cookie gets the Entry Card, she can participate in the Tournament. The user will be highly entertained with the series of fun yet grueling action-games that they must complete: 'French Fry Hammer', 'American Skydiving', 'Sigma Swimming', 'Spartan Hurdle', and 'Alien Clay'. Her performance will depend on the user's abilities, Cookie's parameters, and the training level. A little later, it is revealed that her father, Norman Blair, was a Gold Medalist of the Bombo Sports Tournament 8 years ago. The Bombo Sports Tournament takes place every four years and is held at the Sports Coliseum. Peculiarly, the Sports Tournament is judged by the EBEs (Space Aliens); this mystery will be unveiled as the game progresses.

From the very beginning, the users are presented by an absurdly unexpected event. As Cookie and her Grandma agreed to meet at the Fountain Square, she makes her way there. In the opening scene, the users will see how Cookie loses her 'Free Pass' that grants

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free Bus rides and Food/Drinks (there is no money involved in this game). For this seemingly unfortunate reason, she is unable to ride the bus. Nevertheless, this was a blessing in disguise as the bus is attacked by terrorists, and blown up right in front of Cookie. She later on finds the 'Free Pass' and is able to consume the fun selection of drinks and foods that she can either pick up, or enjoy from the variety of food trucks, restaurants and vending machines.

Bombo World is made of an array of unique maps, each one drastically different from one another. The users will be brought on a wild journey, with every turn unraveling itself to be the least expected thing; there will never be a dull moment. The Main Street leads to the Fountain Square, which leads to the entrance of the Southern Territory. The Southern Territory constitutes of eight maps, all with a unique feature such as a Fruits shop, Bungalows, Cheap Box (a sketchy food truck) and Dolphin Bay.

The users will come across many events from heart-warming human dramas to terrorist attacks. The end of the Southern Territory leads to the 'Egyptian Pyramid', where the user will experience the thrill of running away from mummies to meeting a Bartender who believes WW2 is still going on. There are also 2 warp points that are connected to the Gingerbread House and a pathway to the 'Sports Coliseum'. The exit of the 'Egyptian Pyramid leads to 'Big Heads Yard' where Cookie will meet the 'Big Heads' that she must help, she can also enjoy tacos from the kind Mexican man who owns a Food truck (and

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happens to be a very big fan of Norman Blair). From 'Big Heads Yard', the user can either enter the 'Monkey Forest' or go back to the 'Egyptian Pyramid'.

From the 'Monkey Forest', the user can enter the 'Haunted Mansion' (which is also connected to the 'Oriental Resort') where the user will navigate Cookie through the thrill and pick up imperative items. From the exit of the 'Haunted Mansion', the user can enter the 'Oriental Resort' where Cookie can enjoy the jacuzzi and a rejuvenating massage at the 'Massage Parlor', as well as, fulfill a key task with a tombstone that is connected to the 'Egyptian Pyramid' via a hidden door. From the 'Oriental Resort', the user can enter the 'Gingerbread House' that is inhabited by three Green Goblins – another key figure in the game. From the 'Gingerbread House' the user can enter the 'Bombo Mountain Top' where an extremely fun and dynamic 'Mine Cart Ride' awaits them. The Mine Cart will drop Cookie off at the 'Forgotten Cliff Edge' where another important character, Mu the Prairie Dog awaits Cookie. From the 'Forgotten Cliff Edge', the user can enter the 'Rainbow Waterfall' where a Goddess awaits Cookie. This Goddess plays an essential role in guiding Cookie through her journey.

Taking a right from the Main Street leads the users to the entrance to Derocity, which is made up of a multitude of corridors that make up the complex map. The user will stumble across many unexpected and dynamic places such as the 'Galaxy Hotel', '7th Diner', 'Disco Triumph', 'Tripper', 'Bombo Jail', among others. Derocity is the Northern territory inhabited by the EBEs. In Derocity, the users will discover a prohibited area

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called 'Metal Desert' that they can enter at their own will. Through these maps, Cookie will uncover the mystery that envelopes Bombo World and Derocity.

Another key factor of the game is the variety of NPCs that appear in every map. Some characters such as the shop and food truck vendors remain in the same place. However, the other characters will often be found in different places (as you would expect people to act in real life). Cookie's Bustle prides itself for its attention to detail when it comes to each character, as their background and ever-changing dialogues enhance Cookie's understanding of the world (depending on who she talks to, her parameters will be affected). The users will meet a diverse range of characters in almost every spectrum of gender, age, race, beliefs, sexuality, and so on. The other characters that Cookie meets are imperative to the heart of the game. Every user will find a part of themselves reflected in at least one or more of the characters.

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II. BASIC DEFINITIONS

Work of Science	is an object of intellectual property, registered as copyright work according to the Berne Convention for the Protection of Literary and Artistic Works.
NPC	a non-player character (NPC) is any character in a game that is not controlled by a player.
WW2	World War II or the Second World War, often abbreviated as WWII or WW2, was a global war that lasted from 1939 to 1945.
Cookie Blair	is the main character, a five-year-old girl, who believes she is a baby bear.
Free Pass	is a document entitling the bearer to free transportation, food and drinks.
Bombo World	a tiny country floating in the South Pacific in the game.

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III. ANALYSIS OF CLOSEST ANALOGS

Analogue 1

INTERACTIVE CHARACTER SYSTEM

Patent No.: US 7478047B2 (US)

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(12) **United States Patent**
Loyall et al.

(10) **Patent No.: US 7,478,047 B2**
(45) **Date of Patent: Jan. 13, 2009**

(54) **INTERACTIVE CHARACTER SYSTEM**

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(73) Assignee: **Zoesis, Inc.**, Newton, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 328 days.

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G10L 13/00 (2006.01)
G10L 21/00 (2006.01)

(52) **U.S. Cl.** **704/258**; 704/265; 704/277

(58) **Field of Classification Search** 704/258, 704/265, 269, 277, 278
See application file for complete search history.

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(57) **ABSTRACT**

A system and method for controlling a synthetic character using a control system displays the character engaged in an activity, receiving a first input from a user, determines whether the input is relevant to the activity, if the input is relevant to the activity, and shows the character react to the input, the character being highly expressive and highly reactive. A system and method for displaying a synthetic character provides speech data, creates modified speech data by modifying at least one of the pitch or duration of at least a portion of the speech data and generates modified speech sounds associated with the character using the modified speech data.

71 Claims, 37 Drawing Sheets

A system and method for controlling a synthetic character using a control system displays the character engaged in an activity, receiving a first input from a user, determines whether the input is relevant to the activity, if the input is relevant to the activity, and shows the character react to the input, the character being highly expressive and highly reactive. A system and method for displaying a synthetic character provides

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speech data, creates modified speech data by modifying at least one of the pitch or duration of at least a portion of the speech data and generates modified speech sounds associated with the character using the modified speech data.

The invention provides an enhanced capability and techniques for presenting interactive characters to a user.

In general, in one aspect, the invention features a method for controlling a synthetic character using a control system that includes displaying the character engaged in an activity, receiving a first input from a user determining whether the input is relevant to the activity, if the input is relevant to the activity, showing the character react to the input, the character being highly expressive and highly reactive.

Implementations of the invention may include one or more of the following features. The character has a specified personality. A characteristic of a user avatar is changed in response to the user input, and determining whether the input is relevant to the activity includes determining whether the change in the characteristic of the user avatar is relevant to the activity. Displaying the character includes displaying an animated character on a display screen. Displaying the character includes controlling a robotic embodiment of the character. Showing the character react to the input includes having the character look out of the screen or at an avatar. Showing the character react to the input includes changing the emotional expression of the character to correspond to a first

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emotion. Changing the emotional expression includes changing the facial expression of the character. Changing the emotional expression includes changing the tone of the character's voice. Changing the emotional expression of the character includes changing the speed of motion of the character. Changing the emotional expression of the character includes changing the body posture of the character. Over a period of time, after the emotional expression of the character is changed, the appearance of the character is gradually altered to diminish the expression of the emotion by the character. A second input is received from the user after receiving the first input, it is determined whether the second input is relevant to the activity, and if the input is relevant to the activity, the emotional expression of the character is changed to correspond to a combination of the first emotional expression and a second emotional expression.

In general, in another aspect the invention features a method for displaying a synthetic character that includes providing speech data, creating modified speech data by modifying at least one of the pitch or duration of at least a portion of the speech data, and generating modified speech sounds associated with the character using the modified speech data.

Implementations of the invention may include one or more of the following features. Modifying at least a portion of the speech data includes modifying the speech data with respect to at least selected portions of the frequency spectrum. Displaying the synthetic character includes displaying an animated character on a display screen. Displaying the synthetic character includes providing a robotic embodiment of the

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character. Creating modified speech data includes modifying at least two of the pitch, duration or volume of at least a portion of the speech data. The speech data is modified in real time. The at least a portion of the speech data includes data representing at least one complete word of speech. The at least a portion of the speech data includes data representing at least two contiguous words of speech. An input is received from a user and the display of the character is modified based on the user input. A user avatar is displayed and a characteristic of the user avatar is changed in response to the input from the user, and modifying the display of the character based on the user input includes modifying the display of the character based on the change in the characteristic of the user avatar. The characters are fully autonomous. The speech data or the modification of the speech data is selected based on the user input. Motion data describing a motion of the character is provided, the motion date is modified in real time, and the character is displayed according to the modified motion data. Modifying the motion data includes generating motion data for coordinating the display of the character with the generation of the modified speech sounds. The displaying of the character is tightly coupled with the generated speech sounds. Creating the modified speech data includes providing first sample speech data, providing second sample speech data, comparing the first sample speech data and the second sample speech data, and using the results of the comparison to create the modified speech data. A function of one or more parameters of the speech data is generated, and creating the modified speech data includes applying the function to at least a portion of the speech data. Generating the modification function includes providing a first base function of the one or more parameters, selecting, from a continuous

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range of values, a weighting factor, and generating the modification function using the base function and the weighting factor. Applying the modification function to at least a portion of the speech data includes providing a first base function of the one or more parameters, selecting, from a continuous range of values, a weighting factor, and using the first base function and the weighting factor to modify the speech data. The base function represents a modification of the characteristics of the speech data with respect to at least one of the characteristics in the group inflection, emphasis, emotional quality, stylistic quality, and accent, and the modification function represents a different degree of modification of the at least one characteristic than the base function. The base function represents a modification of the characteristics of the speech data with respect to at least one of the characteristics in the group inflection, emphasis, emotional quality, stylistic quality, and accent, and using the first base function and the weighting factor to modify the speech data results in a different degree of modification of the at least one characteristic than the base function. The at least one characteristic is sadness or happiness. Distortion limits for limiting the modification of the speech data are provided, modification parameters for modifying the speech data are computed, the modification parameters to the distortion limits are compared, and the modification parameters are modified if they exceed any of the distortion limits. The modified speech data is always within pre-determined distortion limits. A representation of an emotional state is associated with the character and the speech of the character is based on the emotional state representation. The character is highly expressive. The character is highly reactive.

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The character has a specified personality. The character is highly expressive, highly reactive and has a specified personality. The character is highly reactive and has at least one of the following group of characteristics: highly expressive, appearing to be intelligent, exhibiting common sense, exhibiting social knowledge, exhibiting knowledge of social norms, having a specified personality.

In general, in another aspect, the invention features a method for modifying speech data that includes providing first sample speech data, providing second sample speech data, comparing the first sample speech data and the second sample speech data, and using the results of the comparison to create modified speech data.

Implementations of the invention may have one or more of the following features. The comparing step includes generating a function of one or more parameters of the speech data, and creating the modified speech data includes modifying at least a portion of the speech data based on the function. Modifying at least a portion of the speech data based on the function includes applying the function to the speech data. The first sample speech data and the second sample speech data are representations of the same utterance. Creating the modified speech data includes modifying any one of the following: pitch of the speech data or duration of the speech data. Creating the modified speech data includes modifying any two of the group pitch, duration and volume of the speech data. The first sample speech data and the second sample speech data differ in at least one of the following qualities: inflection, emphasis, emotional quality, stylistic quality, and accent.

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The modified speech data differs from the speech data in at least one of the following qualities: inflection, emphasis, emotional quality, stylistic quality, or accent. A second function of one or more parameters of the speech data is generated and creating the modified speech data further includes modifying the speech data based on the first function and the second function. The first function and the second function each modify at least one of the group of inflection, emphasis, emotional quality, stylistic quality, or accent of the speech data. Modifying the speech data based on the first function and the second function includes generating a third function based on the first function and the second function and applying the third function to the speech data. Generating the modification function further includes providing a second base function of the one or more parameters, selecting, from a continuous range of values, a second weighting factor, and generating the modification function using the second base function and the second weighting factor. Applying the modification function to at least a portion of the speech data includes providing a second base function of the one or more parameters, selecting, from a continuous range of values, a second weighting factor, and using the second base function and the second weighting factor to modify the speech data. The base function and the second base function each represent a modification of the characteristics of the speech data with respect to at least one of the characteristics in the group inflection, emphasis, emotional quality, stylistic quality, and accent, and the modification function represents a different degree of modification of the at least one characteristic than the base function or the second base function. The base function and the second base function each represent a modification of the characteristics of the speech data with respect to at

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Object: Work of Science: Cookie's Bustle Gameplay Concept	العمل العلمي: مفهوم لعبة صاخبة كوكي
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least one of the characteristics in the group inflection, emphasis, emotional quality, stylistic quality, and accent, and using the second base function and the second weighting factor to modify the speech data results in a different degree of modification of the at least one characteristic than the second base function.

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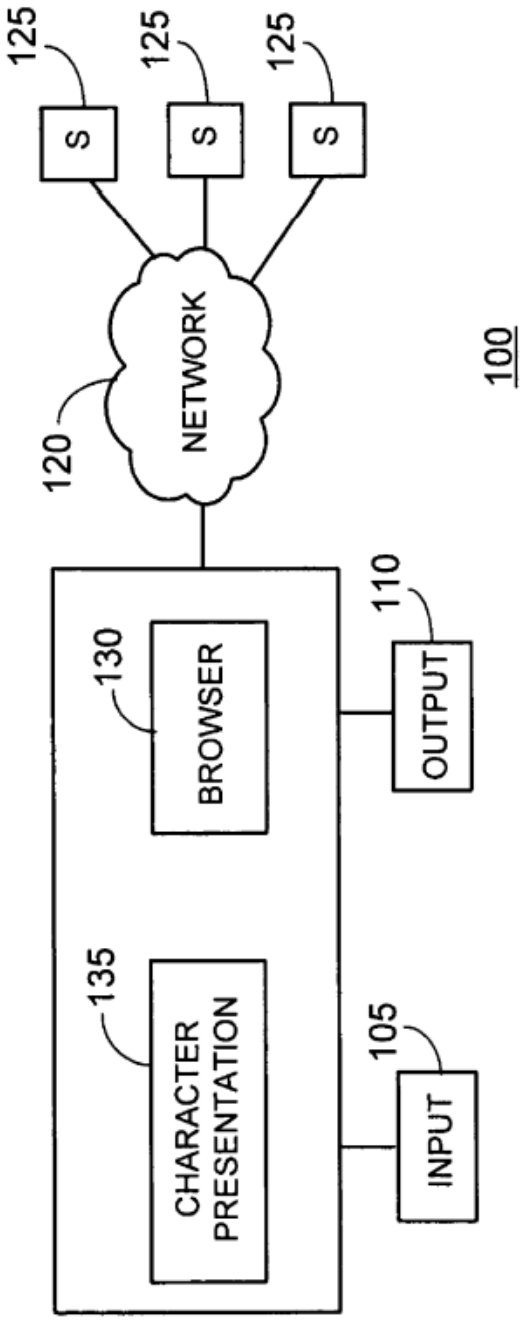

FIG. 1

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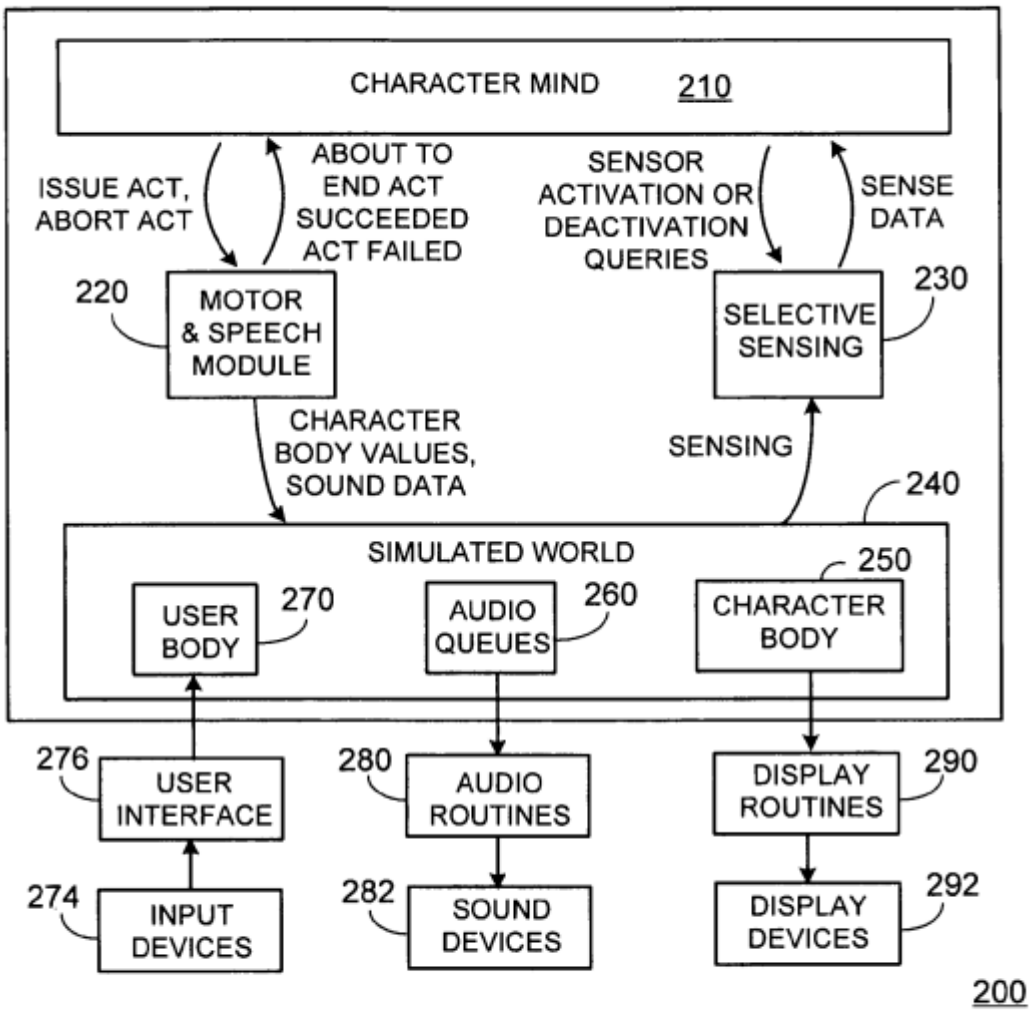

STRUCTURE OF AN INTERACTIVE CHARACTER SYSTEM

FIG. 2

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Analogue 2

AMUSEMENT SYSTEM

Patent No.: US 5127657A (US)

United States Patent [19]
Ikezawa et al.

[11] **Patent Number: 5,127,657**
[45] **Date of Patent: Jul. 7, 1992**

[54] **AMUSEMENT SYSTEM**

[75] Inventors: **Mamoru Ikezawa; Keiji Mochino,** both of Tokyo, Japan

[73] Assignees: **Namco, Ltd.; Togo Japan, Inc.; N & T Co., Ltd.; Akatsukikougei Kabushiki Kaisha,** all of Tokyo, Japan

[21] Appl. No.: **588,550**

[22] Filed: **Sep. 26, 1990**

[30] **Foreign Application Priority Data**

Sep. 29, 1989 [JP] Japan 1-254016

[51] **Int. Cl.**[5] **A63B 67/00**
[52] **U.S. Cl.** **273/310**; 273/312; 273/313; 273/316; 434/21; 472/1; 472/62
[58] **Field of Search** 272/2, 17, 19, 29; 434/21, 22; 273/856, 310, 311, 312, 365, 367, 313, 314, 316

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Primary Examiner—Benjamin Layno
Assistant Examiner—Jessica J. Harrison
Attorney, Agent, or Firm—Oliff & Berridge

[57] **ABSTRACT**

The present invention provides an amusement system having a play zone consisting, in combination, of a plurality of game stages and including a travel path extending through the respective game stages; at least one carrier for receiving a player or players thereon and for moving along the travel path while causing the player or players to play a game at each of the game stages; a score processor for processing the score of the player or the scores of the players; and a representing device for representing the game in each of the game stages, the representing device providing a multi-story game by changing the game presentation mode at a game stage through which the carrier is moving or will move, depending on the total carrier score won by the player or players on the carrier.

16 Claims, 11 Drawing Sheets

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The present invention provides an amusement system having a play zone consisting, in combination, of a plurality of game stages and including a travel path extending through the respective game stages; at least one carrier for receiving a player or players thereon and for moving along the travel path while causing the player or players to play a game at each of the game stages; a score processor for processing the score of the player or the scores of the players; and a representing device for representing the game in each of the game stages, the representing device providing a multi-story game by changing the game presentation mode at a game stage through which the carrier is moving or will move, depending on the total carrier score won by the player or players on the carrier.

It is therefore an object of the present invention to provide a new and novel amusement system which can cause a player on a train traveling along a given path in a play zone to enjoy a game while confirming his score and yet which will not easily cause the player to have lost interest in playing the game by changing one representation mode to another, even though the player plays the same game repeatedly.

To this end, the present invention provides an amusement system comprising:

- a play zone including a plurality of game stages in combination and a travel path extending through said game stages;

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- carrier means for receiving a player or players thereon, said carrier means being movable on and along said travel path while causing the player or players to play a game;
- score computing means for processing the score obtained by each player; and means for representing the game in each of said game stages, said representing means being adapted to change the game from one game representation mode to another in a game stage through which said carrier means is being moved or another game stage through which said carrier means will be moved subsequently, depending on the processed score for each player.

The operation of such an amusement system according to the present invention will now be described as to when it is applied to a shooting game.

In the amusement system of the present invention, the play zone includes a plurality of game stages in combination.

At each time when the player or players on the carrier means are being moved through each of the game stages, targets are displayed depending on a game representation mode at that time.

If a player shoots and hits any target by the use of any suitable gun, the score computing means will be count to provide his score at that time point.

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In such a manner, the amusement system of the present invention can provide a substantially real feel in shooting to the player when he shoots and/or hits targets while getting on the carrier means moving within the game zone and yet provide a very increased amusingness in the shooting game since a plurality of players can compete in their scores with each of the players confirming his own score substantially at real time.

In addition, the present invention is characterized in that the game representation mode is changed from one game representation mode to another in a game stage through which said carrier means is being moved or another game stage through which said carrier means will be moved subsequently, depending on the processed score for each player.

One means for changing the game representation mode is that any one of the game stages is constructed to be variable in game representation mode. Thus, the game representation mode may be simply changed in the variable mode stage at each time when the carrier means is moving or will move through that variable mode stage, depending on the computed score of each player on the carrier means.

The other means for changing the game representation mode may be that the travel path is branched at a given point into a different travel path along which the carrier means can run. Depending on the score of the player or players, the carrier means may be

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conducted onto any selected one of the travel paths along which the carrier means will move through a game stage with a different representation mode.

Since the game representation mode is changed from one game representation mode to another depending on the player's score during playing, the present invention can cause the player to play the game with new excitation and amusingness even if the same player plays the game repeatedly.

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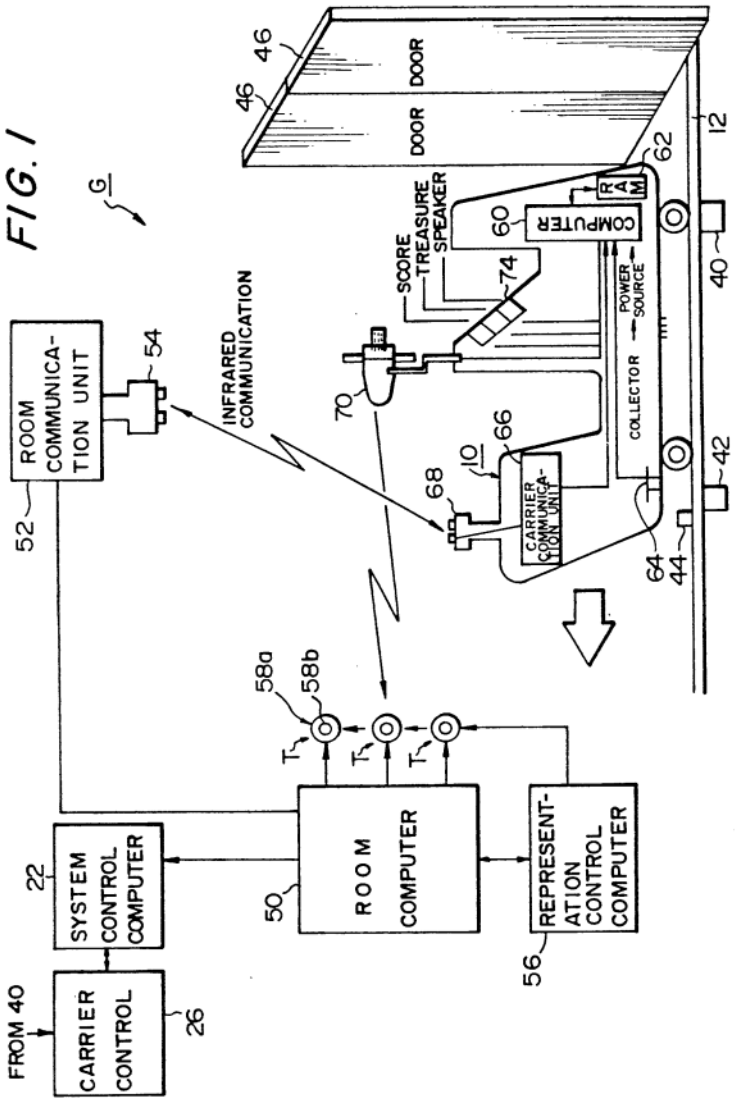

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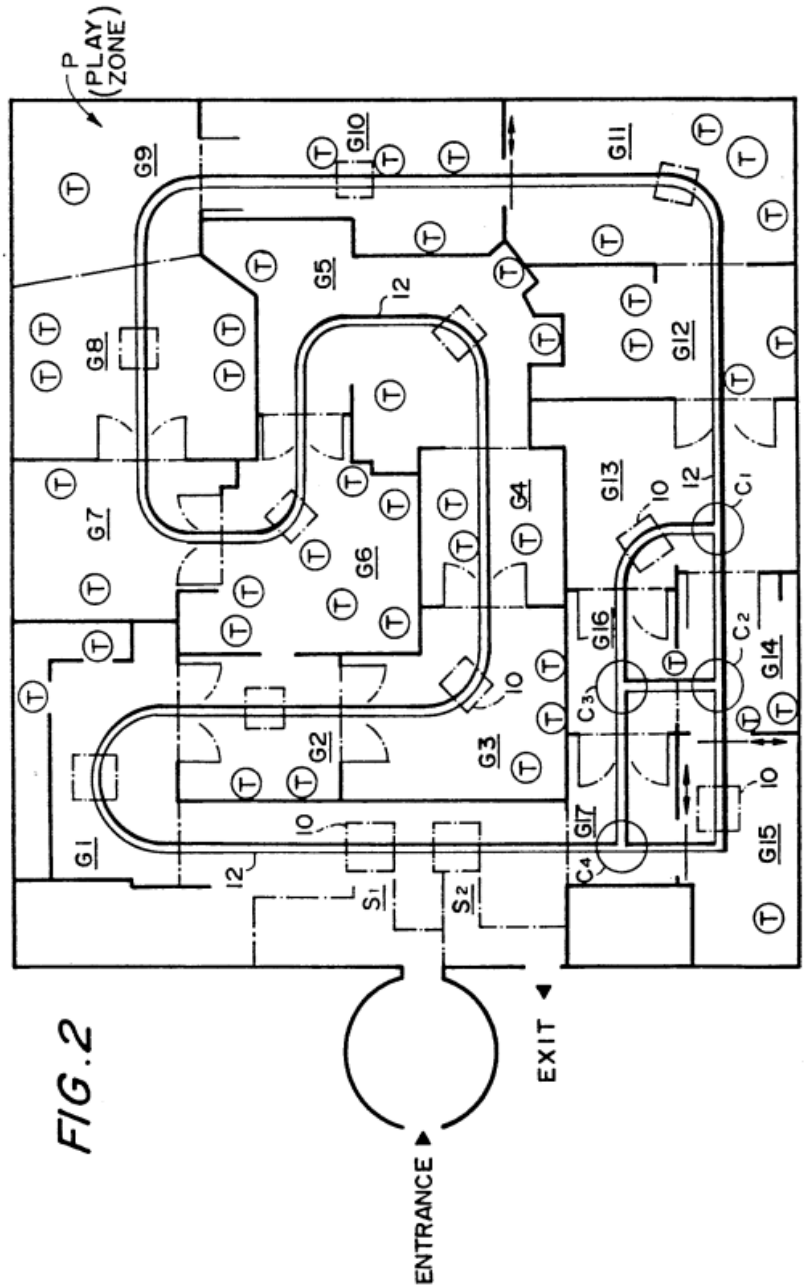

FIG.2

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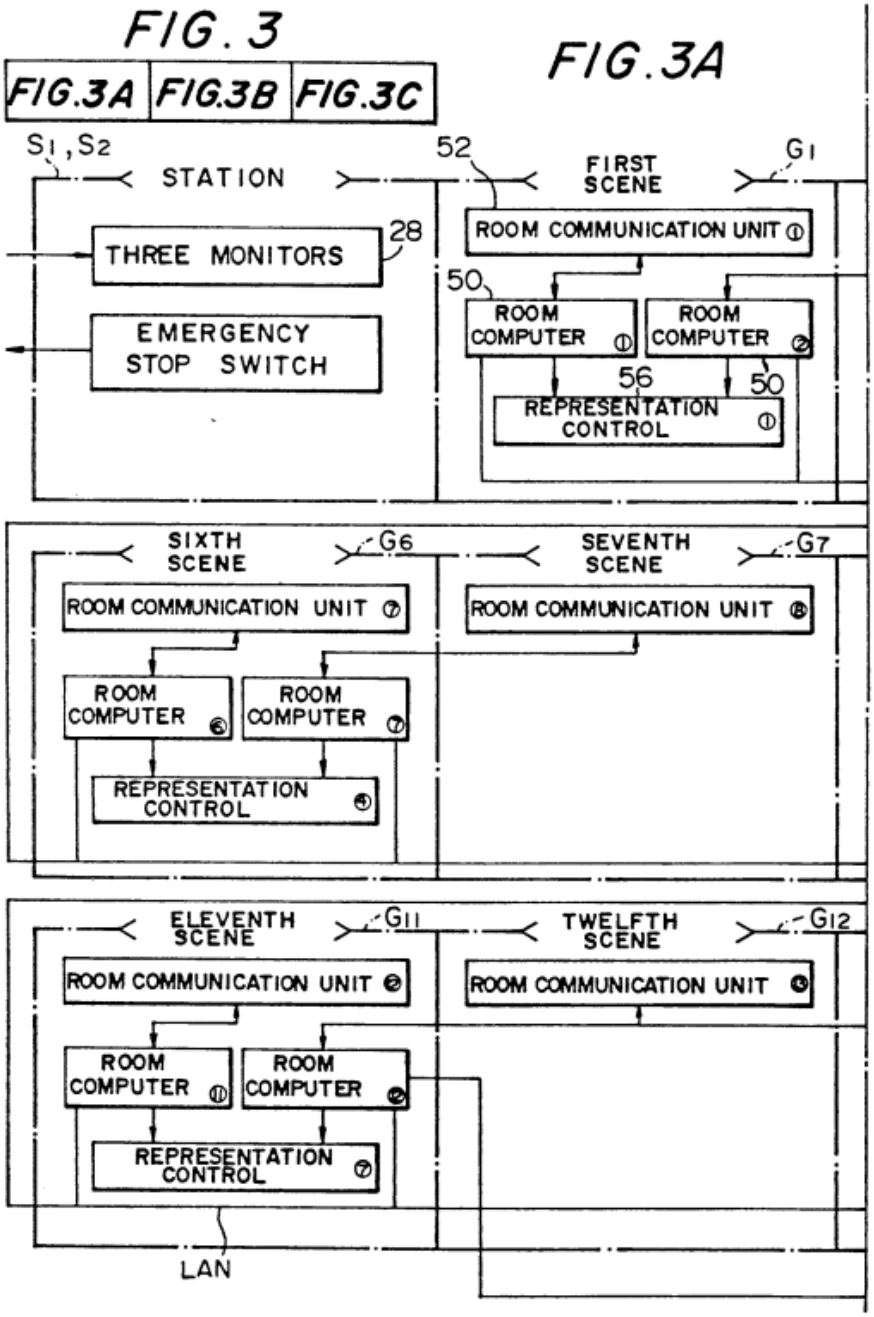

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Analogue 3

VIDEO GAME CHARACTERS HAVING EVOLVING TRAITS

Patent No.: US 20020082065A1 (US)

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2002/0082065 A1**

Fogel et al. (43) **Pub. Date: Jun. 27, 2002**

(54) **VIDEO GAME CHARACTERS HAVING EVOLVING TRAITS**

(76) Inventors: **David B. Fogel**, La Jolla, CA (US); **Timothy J. Hays**, La Jolla, CA (US); **Douglas R. Johnson**, San Diego, CA (US); **Thomas P. Lang JR.**, Rancho Santa Fe, CA (US)

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(21) Appl. No.: **09/748,454**

(22) Filed: **Dec. 26, 2000**

Publication Classification

(51) **Int. Cl.**[7] **A63F 9/24**
(52) **U.S. Cl.** **463/8**; 463/30

(57) **ABSTRACT**

A server-based video game system maintains a number of video game characters having computer-simulated genetic ("digenetic") structures that prescribe a number of physical and cognitive performance traits and characteristics for the video game characters. The system allows end users to establish remote online access to the game characters (via, e.g., the Internet). The results of competitions and training activities are based upon the game characters' digenetics, the conditions of the game environment, and the game characters' current levels of physical and cognitive development. The game characters' performance capabilities and cognition are updated continuously in response to the results of competitions and training activities. Competition and training results can be processed by the game servers and transmitted to the end user presentation devices for graphics rendering. In this manner, the video game system need not be burdened by network latency and other delays. The game system also supports game character breeding; game character evolution based upon the digenetics; and game character buying, trading, selling, and collecting.

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A server-based video game system maintains a number of video game characters having computer-simulated genetic ("digenetic") structures that prescribe a number of physical and cognitive performance traits and characteristics for the video game characters. The system allows end users to establish remote online access to the game characters (via, e.g., the Internet). The results of competitions and training activities are based upon the game characters' digenetics, the conditions of the game environment, and the game characters' current levels of physical and cognitive development. The game characters' performance capabilities and cognition are updated continuously in response to the results of competitions and training activities. Competition and training results can be processed by the game servers and transmitted to the end user presentation devices for graphics rendering. In this manner, the video game system need not be burdened by network latency and other delays. The game system also supports game character breeding; game character evolution based upon the digenetics; and game character buying, trading, selling, and collecting.

The present invention provides an improved video game system and architecture that utilizes game characters having evolutionary capabilities. Unlike prior art game systems that are programmed to generate predetermined results according to specific game conditions, a system according to the present invention employs evolutionary computation techniques in connection with the behavior and capabilities of the game characters. In one practical embodiment, each game character ("digenome") has a unique digital genetic ("digenetic") structure that prescribes the physical capabilities, emotional

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characteristics, cognitive characteristics, physical appearance, and/or other traits of the game character. The digenetics of a game character can also influence levels of expertise, training, and physical and mental prowess exhibited by the game character during its life in a persistent gaming environment.

In the context of a preferred network-based implementation of the present invention, each game character or digenome "lives" in a potentially perpetual universe maintained at one or more centralized servers. The performance characteristics, appearance characteristics, physical capabilities, and cognitive characteristics of the digenomes (which are preferably updated over time) are stored at the server level. The digenetic patterns of the digenomes are stored in a secure manner at the server level. In this manner, end users can interact with the virtual and perpetual gaming world in a remote manner via, e.g., the Internet. The server-based game system simulates the development of the digenomes, competition results, and evolution of digenomes by processing the current digenetic data, digenome characteristic data, game environment data, and other data that may be updated continuously over time.

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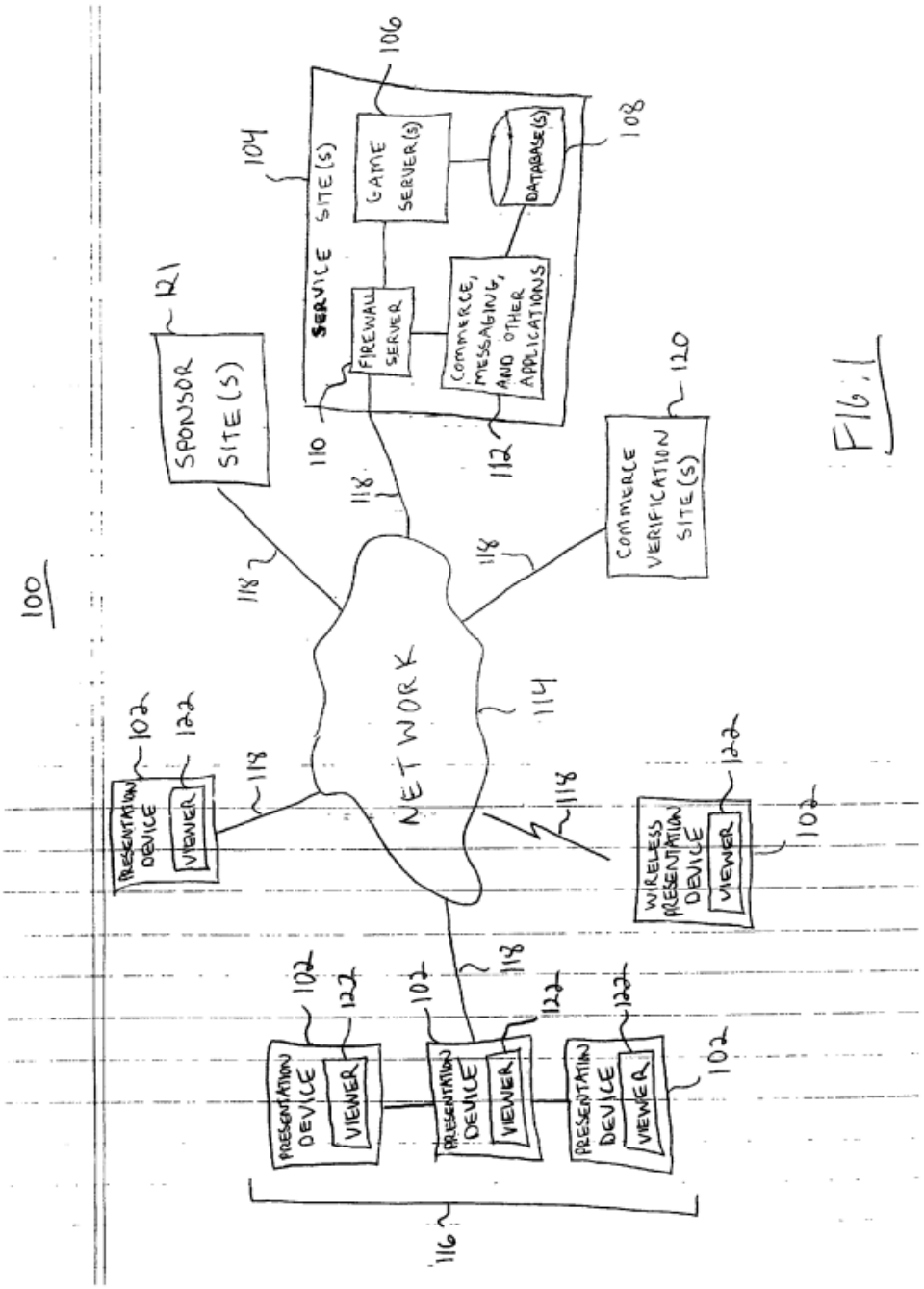

Fig. 1

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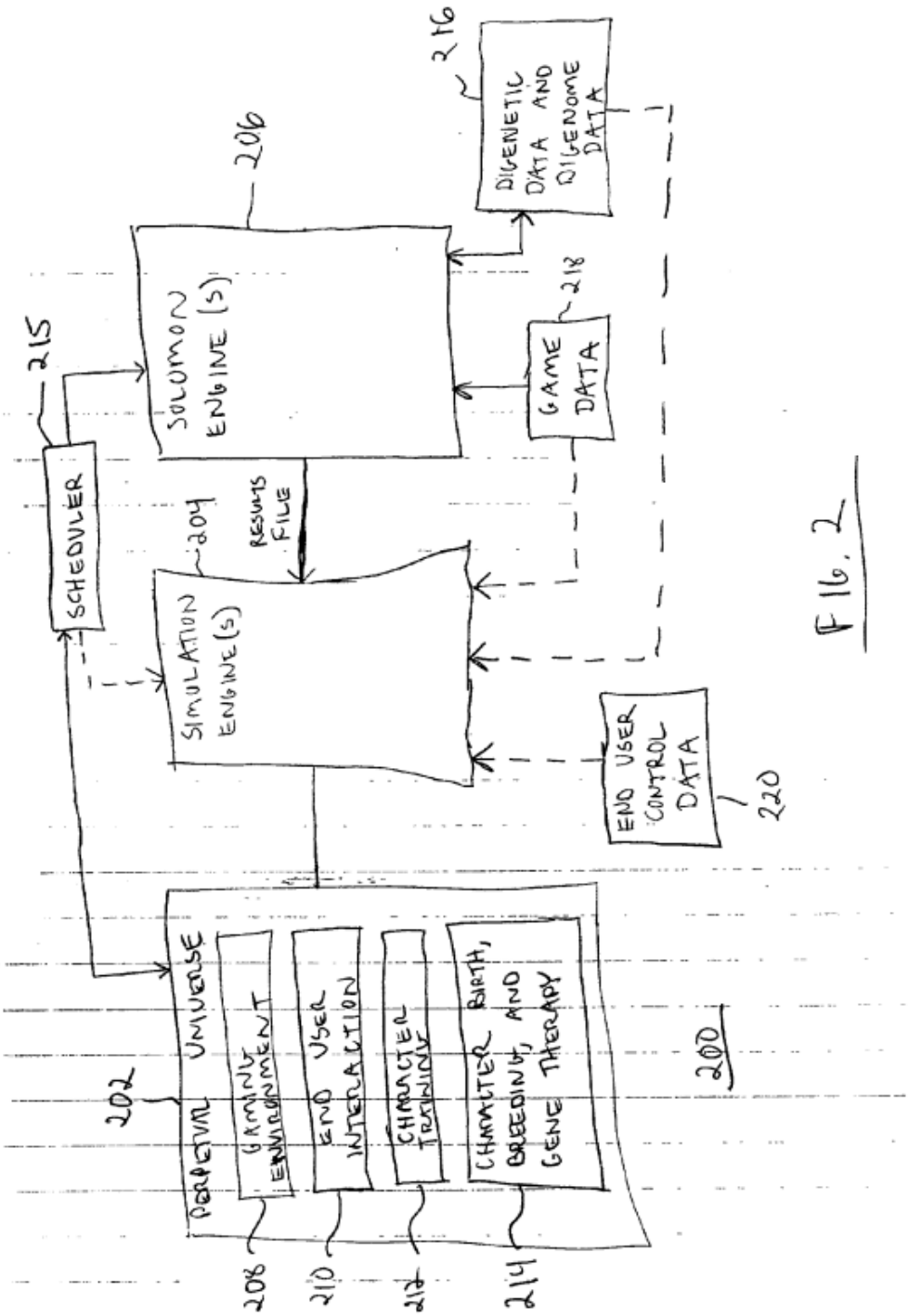

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IV. RELEVANCE AND SUMMARY OF WORK

Cookie's bustle goes beyond its surface as a fun and dynamic adventure game, there is an evident higher purpose that persists throughout the game. Throughout the discourse of the game, the user goes through a developmental journey alongside Cookie. Although initially, her main goal in Bombo World is to win the Gold Medal in the Bombo Sports Tournament, the user will soon begin to understand that there is a deeper meaning. At the beginning, the user will expect Cookie to meet her Grandma, who will take care of her. However, her Grandma is missing and Cookie is alone on her journey. From the very beginning, Cookie is confronted by the harsh reality of the world; the scary bus driver and the terrorist attack. There are a few 'dark' scenes, for instance, when Cookie is searching for her Grandma at the Fountain Square, the policeman takes advantage of her, and begins to act inappropriately (he lifts her up and rubs his face on her, the portrayal is mild). Despite these harsh experiences, Cookie remains bright and optimistic, reflecting her character arc.

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Setting of the Cookie's Bustle's MAP

A 100 year ago, a UFO crash-landed on Bombo World, a tiny country floating in the South Pacific. When the President of Bombo World met the EBEs (space aliens) from the UFO, he promised them the northern part of his country on the condition that they give him their advanced technology. Since then, Bombo World prospered into a country full of unique features with diverse sceneries and cultures as follows: - Southern part is called 'Southern Territory' where wild nature and multi-cultural heritage are preserved. - Northern part is called 'Derocity' that the EBEs developed with an unknown metal. It is surrounded by 'Metal Desert' (also made from unknown metal).

Cookie's Bustle is full of unique designs, maps and features, but the factor that truly brings life to the game is the extensive variety of the other characters that appear throughout Cookie's journey. With nearly 200 unique character design and traits, they feel truly human; as well as the design, the dialogues are what really gives heart to each conversation. Being a five-year-old child, Cookie commences her journey with innocent eyes but, as she talks to every character, she matures and begins to understand the world around her. As it is a free-range game, the user can choose who they want to talk to any time, given that the character is in the map (as they move places). It is highly recommended that the users talk to all the characters, as they are essential to gain information, as well as create connections that will be imperative to complete the game. In spite of its development in the 90s, the creators of Cookie's Bustle were ahead of their

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time in their diverse characters, each one representing real human characteristics and situations. Some examples are:

- Anna, a warm-hearted woman who cares for Cookie deeply as she resembles her daughter that she had lost to a terrorist attack.

- A lawyer who is adamant on suing the police officer for the money.

- Janette, a sassy woman who happens to be transgender and struggles with depression.

- Laura, a dancer that Cookie meets at 'TRIUMPH' (a nightclub in Derocity). With Cookie's encouragement and the special red shoes that the user will find in the 'Egyptian Pyramid', Laura restores her passion for dancing again.

- Jessica, a singer who fights leukemia and teaches Cookie what true love and grievance mean.

- Iris, the Goddess of Rainbow guides Cookie with her heart of wisdom and love.

- Mu the Prairie Dog, a cute little friend that Cookie rescues from imprisonment, the users will see how every good deed comes back to them as Mu later rescues Cookie at a critical point.

The above were just a few among the many special characters that make the game so memorable.

At the very center of the story line is the existence of the space aliens, EBEs. The backstory is that, 100 years ago, a UFO crash-landed on Bombo World. When the

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President of Bombo World met the EBEs from the UFO, he promised them the northern part of his country on the condition that they give him their advanced technology. Some opposed the administration of the central government and anti-government activities intensified. Owing to the original 'Dero' family who owned the Northern land, the EBEs quickly developed the Derocity. At first glance, Derocity is an endless maze of metal corridors but soon, the users will stumble across different characters, and discover the 'Training Center', and impressive leisure facilities such as the 'Galaxy Hotel', 'Tripper', '7th Diner', 'TRIUMPH' (disco), etc. All of which are owned by the Dero family, as the EBEs have no interest in making money.

The eerie existence of the 'Metal Desert' is one of the pillars to solve the mystery of Bombo World. Despite the prohibition to enter the Metal Desert, the door is always open, as the name suggests, it is a never-ending desert made of just metal. As Cookie enters and explores, she sees failed explorers who had died; this alludes to the human temptation to explore prohibition. If the user is determined enough to walk 50 maps in any direction, they will meet Harry, the creator of the game. The dialogue between Harry and Cookie is incredibly profound as he explains to her that the world, she lives in is made just for her, implying that it is a virtual world. Throughout the game, the Quantum Theory is both implicitly and explicitly implied such as, through the dialogue with Professor Eaton. Another key character is Dr. Right, a scientist who is researching and developing Antimatter, for its potential to serve as a limitless energy provider for developing countries and the Bibla Energy that could cease the power of weapons and viruses. For

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Object: Work of Science: Cookie's Bustle Gameplay Concept	العمل العلمي: مفهوم لعبة صاخبة كوكي
Web-address: https://interoco.com/all-materials/work-of-science/3823-concept.html	

this reason, the Bombo Government chases him. Towards the end, it is revealed that he loved Nancy, Cookie's Grandma. Cookie is reunited with her Grandma for a brief yet powerful moment when she comes to save Cookie, and reveals that her association with Dr Right had led her to be chased by the Government.

The theme of weapons is implicitly central in the game. The users see the violence caused by the terrorist who hail the name of the infamous John Simpson, a terrorist who stole the N66 (that the EBEs had brought from Space). When Cookie finds a gun in the Pyramid, she throws it away, this symbolizes that in order to fight, weapons are not necessary as they cause further trouble.

Through the journey of self-discovery, participating in the Tournament, and developing profound relationships with the other characters, Cookie uncovers her destiny. When she manages to stop the bomb from exploding, the EBEs tell her their true goal. The Galactic Union had sent the EBEs to observe humans, the polluters of the Universe, to evaluate whether they deserve to exist. Through the Bombo Sports Tournament, the EBEs collected Humans from all parts of this Earth. The EBEs tell Cookie that they have decided that humans have no value of existence due to their tremendously inevitable dilemma, which is, that without systems such as Nations and Religions, humans cannot maintain social stability. However, due to these systems, there is a viscous cycle of War and Environmental damage. The EBEs tell her that the only way for humans to live in harmony is to refine their Intelligence and Sensitivity, and that they must hold a heart of

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unconditional love. To this, Cookie begs them to give her a chance to talk to everyone. The EBEs agree to this and Cookie holds a press conference as a Gold Medalist. At first, everyone is cheering for her but once she begins to talk about stopping conflicts of fighting over religion, and starting wars for our own countries, she is bombarded with ridicules and booing. Everyone begins to yell at her, calling her a traitor, a liar and a brat. As everyone begins to disappear, Cookie is sucked in through a portal where she finds herself in a mysterious place called 'Akashic Space' with just a piano sitting in the middle. She hears Jessica's voice from above telling her that 'music has the power to transmit love and truth to people'. Cookie begins to play the magical piano with the mysterious music sheet. This music is transmitted across the whole globe, transcending to every country, religion, culture and nation. Everyone begins to look up at the sky in astonishment, and for the first time, the world is embraced in nothing but unconditional love and beauty. As this emotional scene ends, the users see the Metal Desert erupting to release the UFO (that had crash-landed 100 years ago). Cookie is taken away with the EBEs.

Cookie's Bustle can be installed and used solely for Windows and MacOS users. The users can install the original version of the software (1999) from the CD and the latest version of the software (2021) from the web. The time available and price will vary. To prevent illegitimate use and sharing, the software has copy-protection system including serial number verification.

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Once the user has installed the software correctly on their Windows or MacOS, they will see the home menu, which is Cookie's desk, and 3 teddy bears that indicate different save data: 'Player 1', 'Player 2', and 'Player 3'. This is because; one user is able to have up to 3 save data. For instance, if one person installs Cookie's Bustle, either they can use all 3 save data for themselves, or they can share the software with two other people (friends or family) who have physical access to the computer. Neither exchanging nor sharing of data is possible as only one user can play at a time. This software is not a multi-player game, and does not require Internet connection to play. However, the user is required to have Internet connection to install, authenticate and update the software.

When a user's activity is detected as suspicious, the user will be required to follow the authentication steps, which will require Internet connection. There is a specific algorithm that enables the software to detect illegitimate usage of the software e.g., tampering with the time, and/or system, or illegal distribution. From the very beginning to the end, this software is a one-player game, including the action-games to complete the Bombo Sports Tournament. The user will be competing against the NPCs that participate in the game. From the 3 save data options, the user can select which 'Player' they want to start or resume as. There are 2 options for each save data: 'New' to start a new game, or 'Load' to continue from their last saved data.

In the home menu, there are two other buttons on the right-hand side: an 'X' to quit the software, or a '?' mark for the tutorial. The tutorial is an extremely engaging and fun

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way for the user to understand the workings of the game before playing. The Hostess guides the users through a series of tutorials for each function of the game with a clear explanation. The users must simply follow her instructions and carry out the simple tasks given to them.

Cookie's Bustle is a point-and-click adventure game, and requires the users to have a keyboard for the series of action-games that make up the Bombo Sports Tournament, and a mouse for all the basic controls. The following are the detailed explanation of the functions of the game:

- 'Walking'

The user can make Cookie walk by moving the cursor to the direction they want to go to, and she will follow the direction the user places the pointer on the screen. The movement between maps is seamless, if the user wants to move out of the map, they simply have to place the pointer to the direction available to them (up/down/left/right).

- 'Running'

To make Cookie run, the user will click down on the left side of the mouse, and place the cursor to the direction they want to lead her to (just as they will when making her walk).

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- 'Talking'

Throughout the game, various other characters appear in each map. The user can choose freely to whom they wish to speak to. To talk to the other characters, the user can move Cookie to the person they want to talk to, and face them towards one another. It is recommended that the user talks to as many characters as possible, as the other characters give Cookie essential information to progress throughout the game, as well as increase the invisible internal parameters of her maturity and knowledge.

- 'Yes/No'

When given the option, Cookie can answer Yes/No questions in a dialogue. The user simply has to choose whether they want to say yes or no, and click on the option.

- 'Getting'

In the game, Cookie can pick up various items. Some of the items are essential to progress in the game, whereas other items are not necessary, but useful. Many maps contain various items, the essential ones are for instance, the 'Free Pass' that Cookie drops before riding the bus, the different-colored 'Entry Card' that allow the users to enter the 'Sports Coliseum', and other items that will be required to complete the tasks given by other characters. There are also the items pertaining to the 'Fifth Elements' that are very useful to have later on. Another important aspect of the game is the selection of different food and drink items that Cookie can pick up. Canned foods and bottled drinks can be found hiding in certain parts of the map. To pick up an item, the user must simply guide

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Cookie to the place, and Cookie will pick the item up herself. The 'DJ' or Cookie will announce what she had picked up, sometimes accompanied by an explanation (such as, for the items of the Fifth Elements). For food and drinks, the users can also visit the different vending machines, restaurants, food stalls and food trucks. As the game does not require money of any sort, the users are free to select what they want to feed Cookie. The user can choose from the endless list of options (depending on the place they visit): steaks, dumplings, sushi, fruits, tacos, hot chocolate, juices etc. The user must also be careful to not overfeed Cookie, as it will affect her training.

- 'Parameter'

Cookie has an invisible parameter that indicates the following:

1. 'Power': Cookie's overall physical strength. If she is energized enough to participate in the Tournament or complete tasks and events. The user can improve this parameter by making Cookie eat, drink and rest.
2. 'Mind': Cookie's mental state, if she is feeling happy or down. At times, this can be affected by whom she talks to.
3. 'Moral': Influenced by the actions the user decides to take.
4. 'Experience': Her experiences increase her maturity level, and ability to comprehend deeper issues.
5. 'Technique': Based on the amount of training the user takes Cookie to do. This is essential to complete for the Bombo Sports Tournament.
6. 'Food': Her hunger level. It is also affected by what and when she eats.

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Web-address: https://interoco.com/all-materials/work-of-science/3823-concept.html	

7. 'Water': Her thirst level. If the user feeds her saltier foods, her thirst level will go up.

8. 'Fat': How much and what the user has fed Cookie. This affects her training, and thus, her performance during the Bombo Sports Tournament.

9. 'Toilet': How full her bladder is. The user must be careful not to let her drink too much, as she will have to go to the bathroom more frequently. There are toilets available in various places.

All the above components that make up the 'Parameter' will be expressed by Cookie talking directly to the user, saying things like "I'm hungry", "I'm tired", "I'm sad", "I need to go to the toilet!", and so on. The user must be careful not to ignore these indicators, as it will end the game (back to the last saved data). It is highly recommended that the user prepares Cookie fully, before an important event. To know how Cookie is feeling at any given moment, the user can use the 'Kissing' function explained below.

- The user can double click on the left side of the mouse to deactivate walking mode. This enables the user to do the following things:

1. 'Kissing': By bringing the mouse pointer to Cookie's forehead, the user will be able to communicate with Cookie to know how she is feeling.

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2. 'Pocket': By clicking down where the user is not touching Cookie, the user can view and use the items they have picked up throughout the game. The user can also save data and end the game when in Pocket mode.

The target audience is not restricted by gender, income, education nor localization. We aim to distribute Cookie's Bustle in an international scope. All users in every country are welcome to play the game, as long as the subtitle language(s) suite them. The only restriction is the age demographic. As Cookie's bustle displays and explores mature themes such as assault, gun shooting, terrorism, and mild sexual insinuations, our target audience is 15 years old and above. Moreover, Cookie's bustle can only be truly appreciated by an adult audience, as its most essential purpose is the exploration of society, social classes, politics, terrorism, racism, and religion.

Cookie's Bustle has 3 versions in total: Version 1.0, 1.1, and 1.3. The explanation for each version is as follows:

1. Version 1.0, and 1.1

When the software was first released in 1999, Cookie's Bustle was compatible with Windows 95/98/2000 and MacOS 8.1/9. The difference between Version 1.0 and Version 1.1, is only minor bug-fixes

2. Version 1.3

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Web-address: https://interoco.com/all-materials/work-of-science/3823-concept.html	

This is the latest version that will be released into the market in 2022. Along with some bug fixes and multi-language subtitles, this version is made compatible with the Windows 7/8/8.1/10/11. *This version is currently incompatible with MacOS.

Throughout all the updated versions listed above, there have been no modification to the content of the software: story line, characters, dialogues, maps, graphics, and so on.

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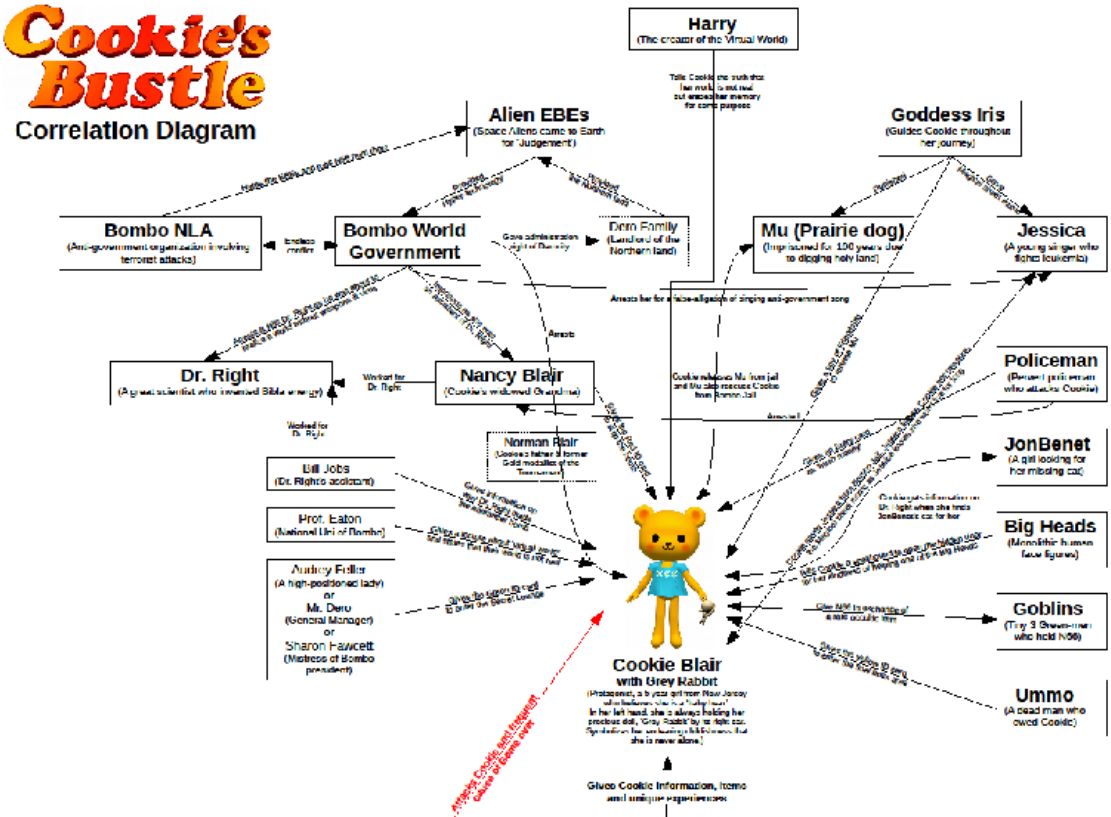

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In order to maintain the authenticity of the game, the content has remained untouched. Cookie's Bustle continues to be the adventure/mystery game that the original fans had loved, despite its short-lived presence in the market. Although, this software is for entertainment purposes, it was created with the intention to evoke thoughts, feelings and emotions in order to catalyze conversations between the users, and the ones around them. As the game enables up to 3 different save data, if one family member or, friend installs the software, 2 other people would be able to play it as well, making it very accessible to many people. In the game itself, the main goal for the user is to complete the action games for the Bombo Sports Tournament to win the Gold Medal as mentioned earlier. However, the main goal of the game is to explore different perspectives through the other characters, to make the users feel something; whether that be happiness, sadness, pity, anger, love etc. Considering the age restriction of 15 years and above, this game could also serve as a source of inspiration to widen perspectives regarding current matters. Cookie's Bustle is careful not to be lenient on a certain points of view. Despite the portrayal of various religions, races, sexuality, gender, age etc., it avoids the politicization of these matters. Rather than from a political viewpoint, Cookie's Bustle presents the users with a human perspective of the world, which is further amplified through the innocence of the protagonist, Cookie.

As long as the user respects the software's integrity, they are free to interpret the game's story line with their own perspective. They must however, be aware that there is

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an original story line established by the creator, and any sort of tampering, demeaning or outwardly false information spreading is deemed unacceptable.

1. Gabriel Knight: Sins of the Fathers

*'A 1993 point-and-click adventure game, developed and published by Sierra On-Line for MS-DOS, Macintosh, and Microsoft Windows, and released on December 17, 1993.'

2. Indiana Jones and the Fate of Atlantis

*'A point-and-click adventure game by LucasArts originally released in 1992.'

3. Undertale

*'A 2015 American 2D role-playing video game created by indie developer Toby Fox.'

*Source: Wikipedia

Point-and-click adventure games were highly popular, especially in the 90's. The examples given above, 'Gabriel Knight: Sins of the Fathers' and 'Indiana Jones and the Fate of Atlantis', are just a few of the famous examples. However, for Cookie's Bustle, although claimed to be a point-and-click game, it has been innovated to facilitate the control of the user over Cookie's movements. In usual point-and-click games, the user is required to constantly click to the places they want to move to. However, in Cookie's Bustle the user simply needs to guide Cookie by pointing the cursor to where they want to go. Clicking down is only necessary when the user wishes to make Cookie run. Many

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functions that are characteristic of Cookie's Bustle are very unique in the market. Although in many software, the users can pick up items, it is usually just necessary items in order to complete the quests, but in Cookie's Bustle, there is such a vast range of items possible, that it is impossible for the users to pick up all of them in their first run. As this software was developed in Japan, the items, food, drinks etc. available present a uniquely international diversity. Another key factor of the items is the ones pertaining to the Fifth Elements' that are very useful to have later on. The 'DJ' will announce what she had picked up, sometimes accompanied by an explanation (such as, for the items of the Fifth Elements). Although rare in other adventure games, Cookie's Bustle offers the users the option to visit different vending machines, restaurants, stalls and food trucks. As the game does not require money of any sort, the users are free to select what they want to feed Cookie.

There are other adventure games, in which they display the character's parameter to indicate their energy level. In Cookie's Bustle, this parameter does not consist of just energy/life, instead it consists of the following components: 'Power', 'Mind', 'Moral', 'Experience', 'Technique', 'Food', 'Water', 'Fat', and 'Toilet'. These parameter levels are not displayed for the users to see in Cookie's Bustle but instead, the parameter levels are reflected on Cookie's speech and behavior. There are almost no other adventure games that require users to be attentive to their character's bladder level. The aspect that both annoy and entertain the user is the fact that they must ensure to bring Cookie to the bathroom to avoid the game ending; after all, she is a five year old.

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Prevalent in the game is the theme of virtual world, to highlight this Cookie's character seems to be aware of the user as she talks to them directly about her thoughts. A unique function in the game is 'Kissing' Cookie to know how she is feeling at any given moment. The concept of 'inventories' are present in almost every game. However, in Cookie's Bustle the inventory is Cookie's 'Pocket', which is very easy to open and control. The functions of saving data and ending the game is also done through 'Pocket' mode.

Undertale is a renowned PC game that is famous for its simple yet profound exploration of human nature through the main character who is a young boy. Although the game creator's intention to create a profound portrayal of human psychology through the eyes of a child is similar, Cookie's Bustle and Undertale are very different in many aspects. Undertale, having been developed in 2015, and Cookie's Bustle in 1999, the graphic depiction of the story is vastly different. In Undertale, the user can only move in the direction of the map (up/down/left/right) whereas in Cookie's Bustle, the user moves Cookie freely within the map. Each software has important dialogues and distinctive characters. However, Cookie's Bustle has voice actors for each character whereas Undertale has no human voice actors.

Gabriel Knight: Sins of the Fathers focuses on supernatural themes, the characters, and the backstory of the protagonist. In Cookie's Bustle, although there are constant

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notions of the supernatural, it is not the only focus of the game. The map in Cookie's Bustle has a wider range than the one in Gabriel Knight, as the user can guide Cookie freely.

Overall, in this saturated gaming market, Cookie's Bustle, created and released in Japan in 1999, has a vast array of unique and innovative functions, plots, style, and many more.

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Web-address: https://interoco.com/all-materials/work-of-science/3823-concept.html	

V. LEGAL BASIS

Examination of the current **Work of Science "Cookie's Bustle Gameplay Concept"** was held by the Patent expert Dr. Sandjar Muminov on the basis of following international (WIPO) and the normative legal acts of the United Arab Emirates:

1. Berne Convention for the Protection of Literary and Artistic Works of 9 September 1886 in Paris, complemented by 4 May 1896, revised in Berlin on 13 November 1908. Supplemented in Bern on March 20, 1914, and revised in Rome on June 2, 1928, in Brussels on June 26, 1948, in Stockholm on July 14, 1967, and in Paris on 24 July 1971, as amended September 28, 1979 (the UAE acceded to the Berne Convention in 2004);

2. The Federal law of the United Arab Emirates number 7 "On Copyright and Neighboring Rights" of July 17, 2002;

3. The Federal law of the United Arab Emirates, number 7, "On the National Centre for Documentation and Research" (2008);

4. The UAE Decree-Law number 5, 2012 "On the fight against cybercrime" (2012);

5. The Federal Law of the United Arab Emirates number 8, "On the commercial organizations of the United Arab Emirates' (1984);

6. The Federal Law of the United Arab Emirates number 3, "On the federal judiciary" (1983);

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7. The Federal Law of the United Arab Emirates number 31, "On the regulations governing the protection of industrial property: patents, industrial designs" (2002);

8. The Federal Law of the United Arab Emirates number 18, "On the conclusion of commercial transactions" (1993);

9. The Ministerial Order № 133, "On copyright collective" (2004);

10. The Ministerial Order № 411 "On the control of protected works in accordance with the UAE Federal Law № 40," On the protection of intellectual property and copyright "(1993).

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2. Patent No. US OOS 127657A (US), AMUSEMENT SYSTEM.

3. Patent No. US 2002/0082065 A1 (US), VIDEO GAME CHARACTERS HAVING EVOLVING TRAITS.

4. Wikipedia - www.wikipedia.org - a multilingual, web-based, free-content encyclopedia project supported by the Wikimedia Foundation and based on a model of openly editable content.

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VII. INFORMATION ABOUT THE EXPERT

Dr. Sandjar Muminov has a 20 years' experience. His professional merits and achievements include:

- Eurasian Commissioner on Law Supremacy and Intellectual Property of EECO (Eurasian Economic Cooperation Organization) , head offices in Russia, China and UAE, regional offices in 50 countries (www.eurasianeconomic.org);
- President of International Consortium Aston Alliance (headquarters in Dubai, UAE), www.aston-alliance.com;
- Expert of Dubai Silicon Oasis Authority;
- Speaker of the University of Dubai;
- Authorized Expert of INTEROCO Copyright Office;
- Member of International Intellectual Property Law Association (USA);
- Chairman of the International Association for the Development of Intellectual Property (www.maris-global.com);
- Chairman of the Board of the Federation of Innovation and Technologies of Kazakhstan.

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Expert Specializations of Dr. Sandjar Muminov:

- Private advisor on all issues concerning IP legal protection (patent, commercial & copyright law);
- Startup and investments projects;
- Commercialization & capitalization of intellectual property;
- Attracting of investors for business-ideas;
- Protection of copyright, know-how, trade secrets etc.

The total number of customers of Dr. Sandjar Muminov exceeded 6 000 organizations worldwide, volume of intellectual property objects legally protected by Dr. Sandjar Muminov is more than 15 000 units. Total amount of capitalized IP-assets exceeded 2.9 USD billion.